

BIWIN TECHNOLOGIES CO., LTD

Beyond your expectation



BIWIN

TECHNOLOGIES CO., LTD

*A Professional Switch
Designer & Manufacturer*

BIWIN Technologies, targeting on building "win-win" partnership with our customers and suppliers, has been dedicated to the electromechanical switch field since our foundation in 1986. Specializing in designing and manufacturing dip switches, rotary switches, pushbutton switches, etc., we have our own brand "Sab" with the goal to be a Specialist in creating Advantages in our reliable products and services in order to bring Benefits to our worldwide customers and the industry.

百登科技的英文名 BIWIN，取自於 win-win，也就是雙贏之意。我們自 1986 年成立以來，致力於與顧客及供應商建立起雙贏的夥伴關係，並專注投身於電子開關的領域中。我們自主設計並製造如指撥（程式）開關、旋轉開關、按壓開關等產品，並擁有自己的品牌「Sab」，期許成為開關領域的專家 (Specialist)，於我們可靠的產品與服務中創造優勢 (Advantages)，以提供利益 (Benefits) 予我們遍布全世界的客戶與整個開關產業。

BIWIN TECHNOLOGIES CO., LTD.

百登科技股份有限公司

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Sab[®]
switches



Sab[®]
switches



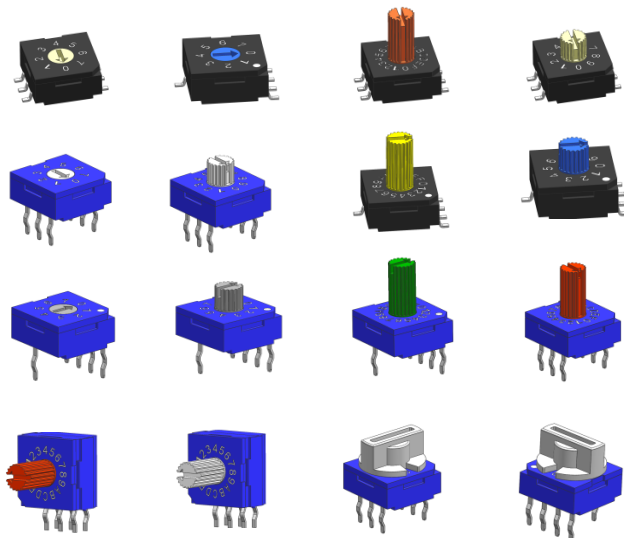


Features

- ◆ Sealed Construction, No Tape Seal Required
- ◆ Surface Mount, Thru-Hole and Right Angle 2.54 & 5.08mm
- ◆ Octal, Decimal and Hexadecimal Code in Real or Complement
- ◆ Gold-Plated Contacts
- ◆ Flush or Extended Rotors
- ◆ Knobs available
- ◆ Washable meet IP67

Specifications

- ◆ Contact Rating
 - Switching : 5VDC 20mA (Min. AC/DC 20mA 1µA)
 - Non Switching : Max. 50VDC 100mA
- ◆ Contact Resistance : 100mΩ Max
- ◆ Insulation Resistance : 1,000MΩ Min. at 100VDC
- ◆ Dielectric Strength : 250VAC for 1 minute
- ◆ Operating Force : 400gf/cm Max. (Standard)
: 200gf/cm Max. (N type)
- ◆ Life : 20,000 Steps
- ◆ Operating Temperature : -40°C ~+85°C
- ◆ Storage Temperature : -40°C ~+85°C
- ◆ Hand Soldering : 350°C 3 Sec. max
- ◆ Wave Soldering : 260±5°C for 10 sec. max.
- ◆ Reflow Soldering : Peak temp.: 245°C max. The time above 240 must be 30 sec. max.



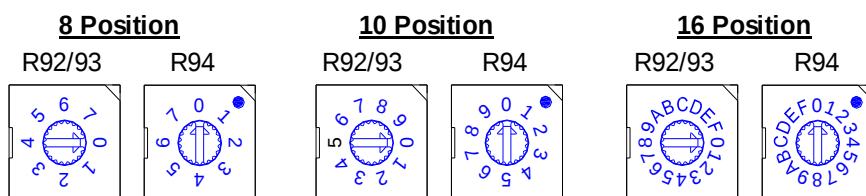
Code Format

No. of positions		(16 positions)																	
		(10 positions)																	
		(08 positions)																	
Position		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F		
Code	Real code	8									•	•	•	•	•	•	•	•	
		4					•	•	•	•					•	•	•	•	
		2				•	•			•	•			•	•			•	•
		1		•				•					•		•		•		•
	Complementary code	8	•	•	•	•	•	•	•	•									
		4	•	•	•	•					•	•	•	•					
		2	•	•			•	•			•	•			•	•			
		1	•		•		•		•		•		•		•		•		

Package

P/N	No. Of Pole	Quantity per Tube
R92__H/D/T/S	08 / 10 / 16	50
R92__V/Y	08 / 10 / 16	45
R93__H/D/T/S	08 / 10 / 16	50
R93__V/Y	08 / 10 / 16	45
R94__H/D/T/S	08 / 10 / 16	50
R94__V	08 / 10 / 16	45
P/N	No. Of Pole	Quantity per Reel
R9__0/1S-R	08 / 10 / 16	600
R9__2/3S-R	08 / 10 / 16	350
R9__7S-R	08 / 10 / 16	200
R9__7H/T-R	08 / 10 / 16	140

Position



Order Information

R9	K	3	10	R	0	S	N	-X	-R	-U	Halogen Free None=Standard U=Halogen Free
Package None=Tube R=Tape & Reel											
Sealed None=Sealed meet IP67 X=Non-Sealed											
Operating Force None=400gf/cm Max. (Standard) N=200gf/cm Max.											
Terminal Type H=Thru Hole D=Thru Hole (Straight) S=SMD V=Right Angle 2.54mm (Thru hole) Y=Right Angle 5.08mm (Thru hole) T=Thru Hole for Reflow Soldering											
Rotor Style 0=Flat (Arrow) 1=0.5mm (Minus Slot) 3=3mm (Minus Slot) 7=7mm (Minus Slot) 1A=0.6mm (Minus Slot with side arrow) 2A=2.3mm (Minus Slot with side arrow)											
Special Code None=Standard K=Black (Thru-Hole) W=White											
Pin Out 2=3+2pin 3=3+3pin 4=4+1pin											
No. of positions 08:8 positions 10:10 positions 16:16 positions											
Code: R=Real Code C=Complement Code											

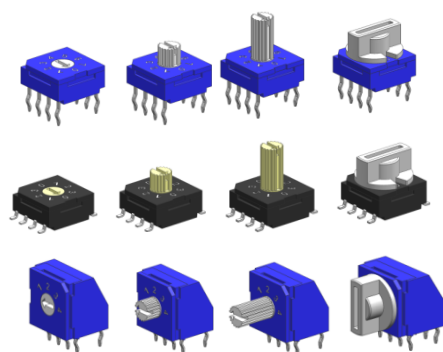
Knob Order Information

KR1	08	Knob Color
KR1	00: Blue	
KR2 / KR2A	02: Green	
	03: Light Grey	
	04: Yellow	
	05: Dark Grey	
	06: White	
KR3 / KR3A	08: Red	
	09: Black	



Features

- ◆ Washable Meet IP67
- ◆ Gold plated contacts
- ◆ Surface Mount, Thru-Hole and Right Angle
- ◆ Flush or Extended Rotors
- ◆ Knobs available



Standard Specifications :

Operating temperature range	: -40°C ~ +85°C
Storage temperature range	: -25°C ~ +70°C
Sealing	: Washable "O" ring
Mechanical Life	: 20,000 Steps

Electrical Characteristics

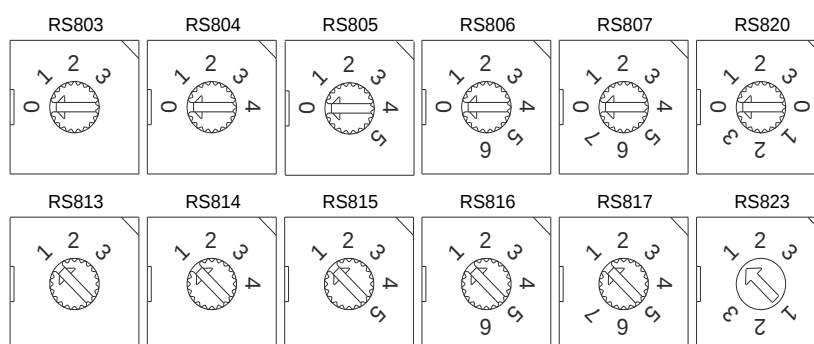
Contact rating :	
Non-switching	: DC 50V, 100mA
Switching	: DC 5V, 100mA
Minimum	: DC 20mV, 1μ A
Contact timing	: Non-shorting
Contact resistance (Initial/after operating life)	: 60mΩ /100mΩ
Insulation resistance	: 100MΩ (DC 100V) Max.
Dielectric strength	: 300VAC/ 1 minute

Soldering Information :

Wave soldering	: 260±5°C for 5 sec. max.
Reflow soldering	: Peak temp. 245°C max. The time above 240 must be 30 sec. max.
Hand soldering	: 350°C 3 Sec. max.

Order Information

RS8	06	7	H	R	U
45° series					Halogen Free
Rotary Selector Switch					None=Standard U=Halogen
Function Code	Rotor Style	Terminal Style	Package		
03 13 20	0=Flat (Arrow)	H=Thru-hole	None=Tube		
04 14 23	1=0.5mm (Minus Slot)	S=SMD	R=Tape & Reel		
05 15	3=3mm (Minus Slot)	T=Thru-hole Refelow			
06 16	7=7mm (Minus Slot)	Y=Right Angle 5.08mm (C vs Pin 1)			
07 17		YC=Right Angle 5.08mm (C vs Pin 2)			



Rotor Style

Flat	0.5mm	3mm	7mm

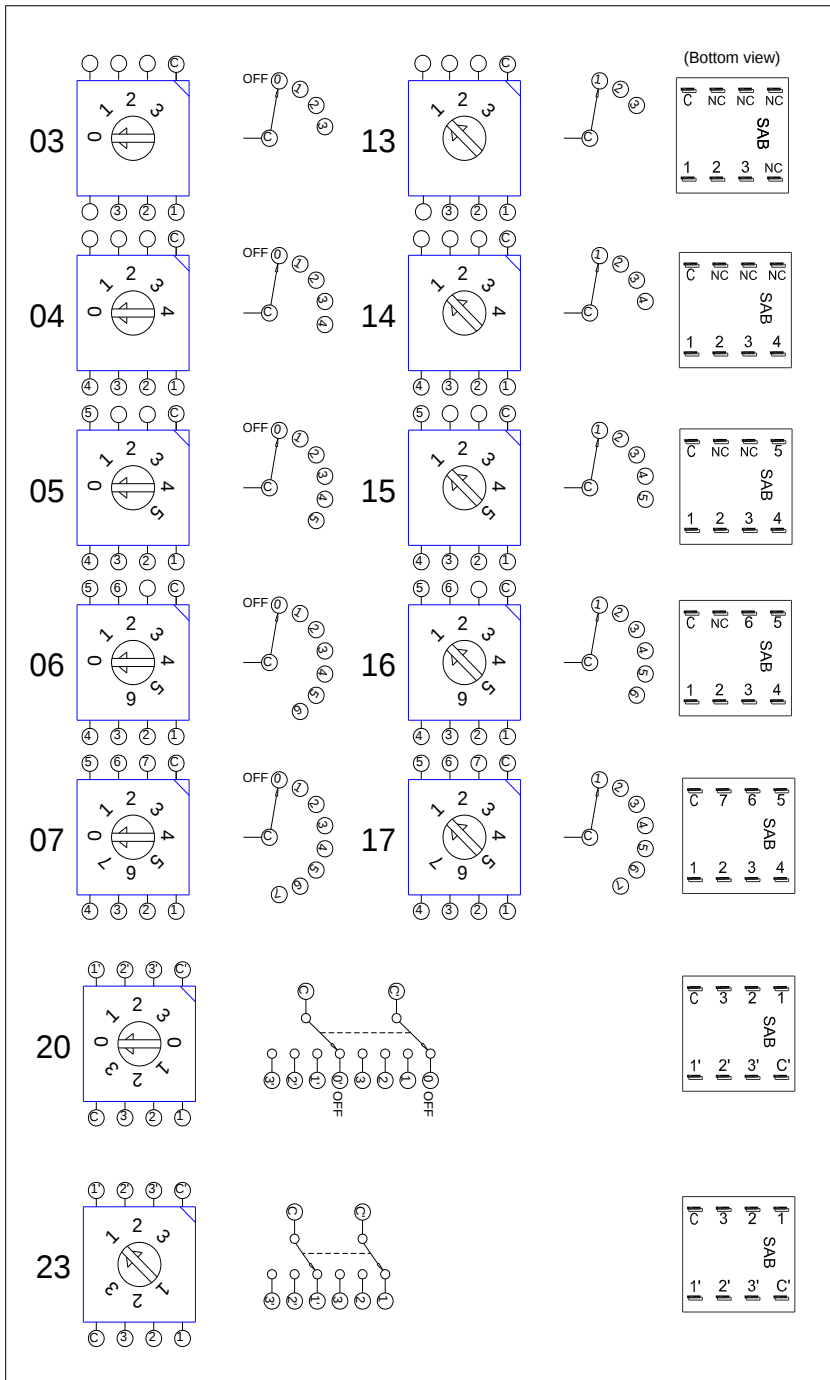


RoHS Compliant

BIWIN / Sab®

RS8 Series — Rotary Selector Switch

Schematic & Terminal Connection

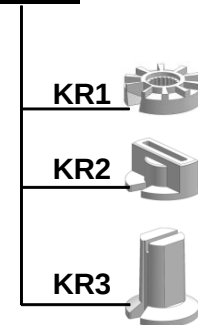


Package

P/N	Function Code	Quantity per Tube
RS8_H/T	03,04,05,06,07	50
RS8_H/T	13,14,15,16,17	50
RS8_H/T	20,23	50
RS8_S	03,04,05,06,07	50
RS8_S	13,14,15,16,17	50
RS8_S	20,23	50
RS8_Y	03,04,05,06,07	45
RS8_Y	13,14,15,16,17	45
RS8_Y	20,23	45
P/N	Function Code	Quantity per Reel
RS8_0/1S-R	03,04,05,06,07	600
RS8_0/1S-R	13,14,15,16,17	600
RS8_0/1S-R	20,23	600
RS8_3S-R	03,04,05,06,07	350
RS8_3S-R	13,14,15,16,17	350
RS8_3S-R	20,23	350
RS8_7S-R	03,04,05,06,07	200
RS8_7S-R	13,14,15,16,17	200
RS8_7S-R	20,23	200
RS8_7H/T-R	03,04,05,06,07	140
RS8_7H/T-R	13,14,15,16,17	140
RS8_7H/T-R	20,23	140

Knob Order Information

KR1



08

Knob Color

- 00 : Blue
- 02 : Green
- 03 : Light Grey
- 04 : Yellow
- 05 : Dark Grey
- 08 : Red
- 09 : Black

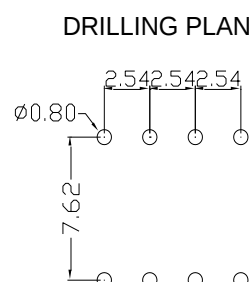
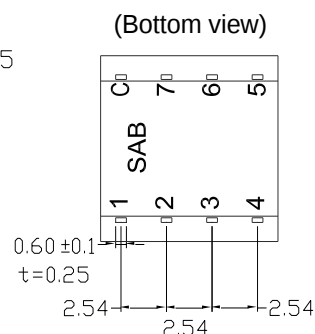
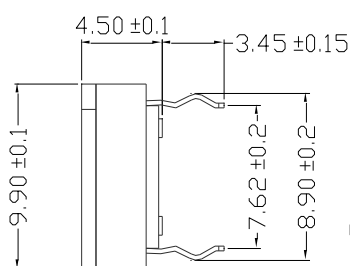
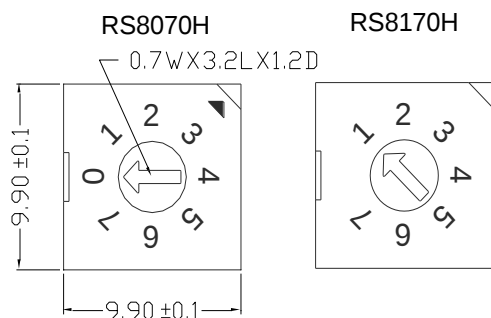
Dummy Terminals

3 positions	④ ⑤ ⑥ ⑦
4 positions	⑤ ⑥ ⑦
5 positions	⑥ ⑦
6 positions	⑦
7 positions	--

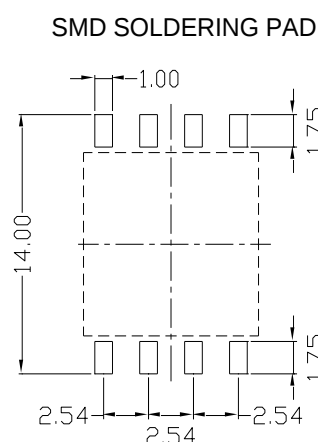
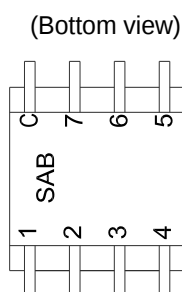
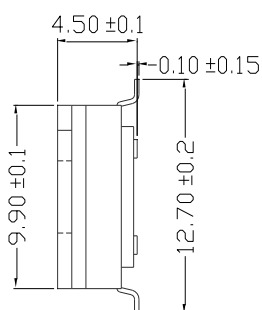
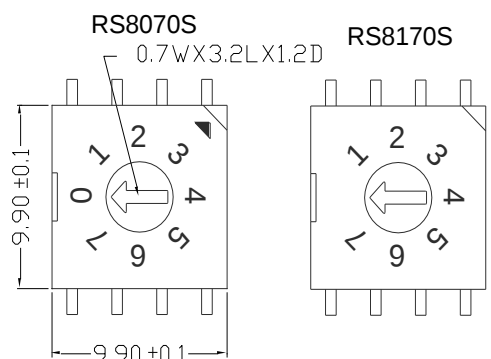
* NC= Dummy terminal

Outline Dimensions

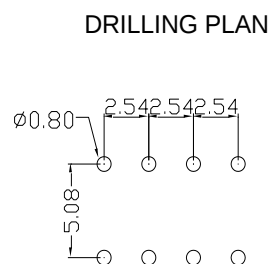
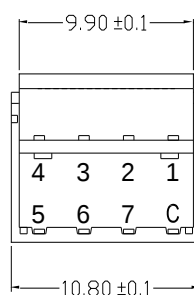
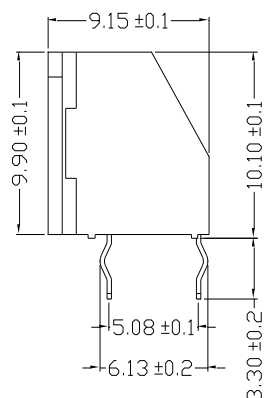
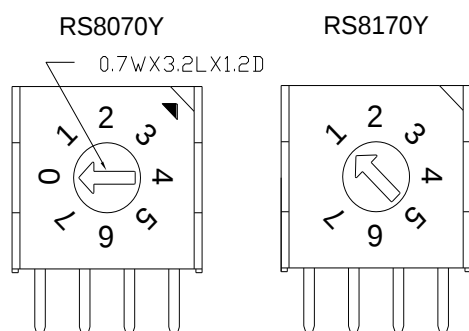
Thru-Hole



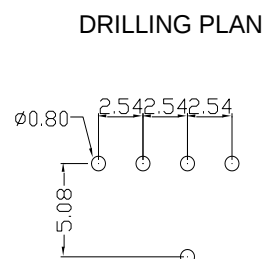
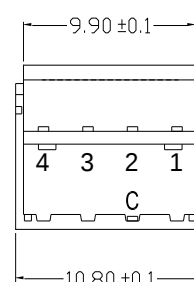
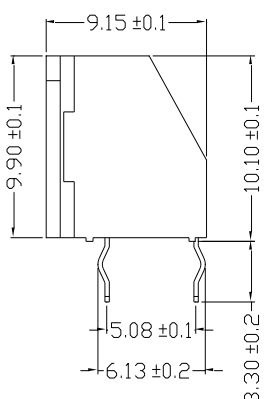
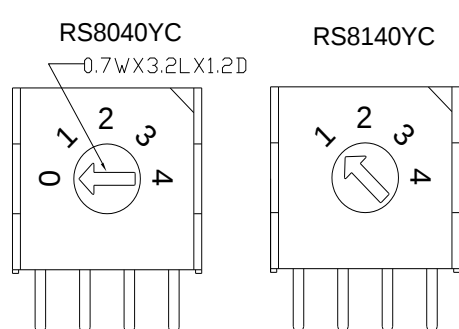
SMD



Right Angle 5.08mm(C vs Pin 1)

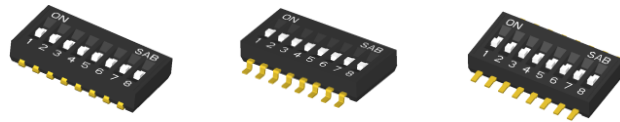


Right Angle 5.08mm(C vs Pin 2)

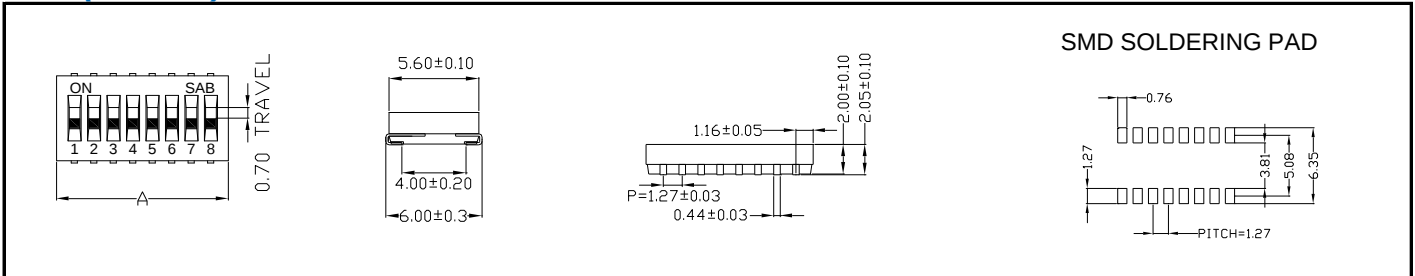


Features

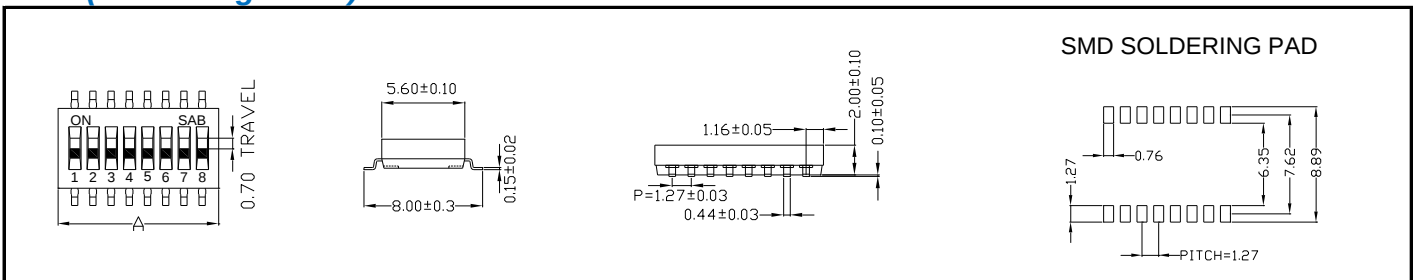
- ◆ Half Pitch(0.05 inch/ 1.27mm) terminal
- ◆ Standard gold-plated electrical contacts
- ◆ Tape sealed version available to ensure washability
- ◆ Singular pole: 1, 3 and 5 available
- ◆ Gull Wing Lead, J Lead and Flat Lead



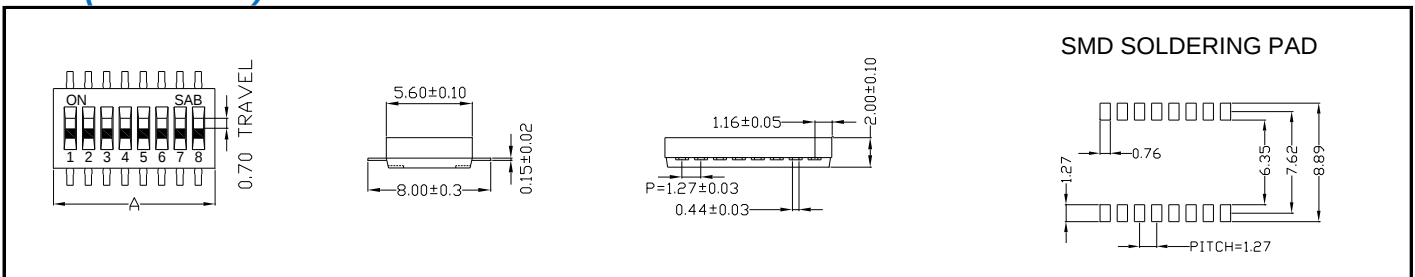
SOJ (J Lead)



SOP (Gull Wing Lead)



SOF (Flat Lead)



Specifications

- ◆ Contact Rating
 - Switching 25mA, 24VDC
 - Non-Switching..... 100mA, 50VDC
- ◆ Contact Resistance
 - Initial 50mΩ Max.
 - After Life Test 100mΩ Max.
- ◆ Insulation Resistance 100MΩ min at 500VDC
- ◆ Dielectric Strength 300VAC/ 1 minute
- ◆ Operating Force..... 500g Max.
- ◆ Mechanical Life 2,000 cycles
- ◆ Electrical Life 1,000 cycles

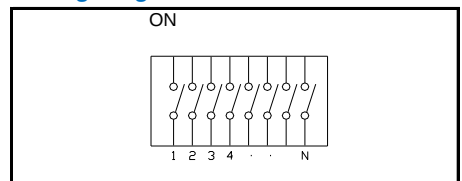
Materials

- ◆ **Cove & Base:** Thermoplastic 94V-0, Black
- ◆ **Actuator:** Thermoplastic UL 94-HB, White
- ◆ **Movable Contact:** Copper Alloy, Gold- or Pure-Tin-plated
- ◆ **Terminal Contact & Terminal:** Copper Alloy, Gold- or Pure-Tin-Plated
- ◆ **Tape Sealed:** Polyimide Film

Packaging Information

- ◆ Tube: SOJ/ SOP
- ◆ Tape & Reel: SOJ/ SOP/ SOF
- ◆ Actuators all in "OFF" position

Wiring Diagram



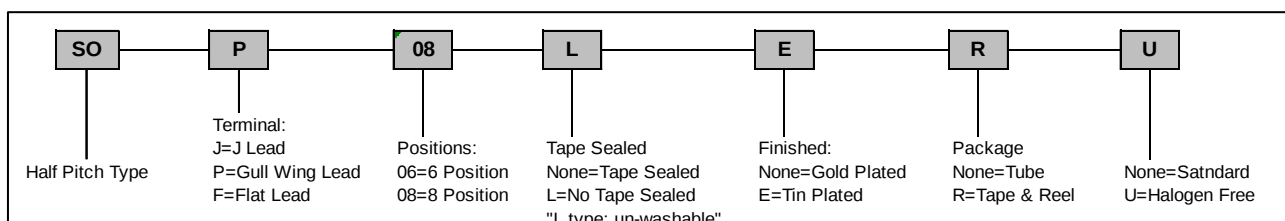
Package

P/N	No. Of Pole	Dim. A	Quantity per Tube
SOP01	1	2.31mm	93 (Half)
SOP02	2	3.58mm	125
SOP03	3	4.85mm	90
SOP04	4	6.12mm	70
SOP05	5	7.39mm	60
SOP06	6	8.66mm	50
SOP08	8	11.20mm	40
SOP10	10	13.74mm	30
SOP12	12	16.28mm	25

Soldering Information

- ◆ Hand Soldering
 - Soldering Iron of 30W or under at 300°C for 4±1 sec. max.
- ◆ Reflow Soldering
 - Peak temperature: 260°C max. The time above 255°C must be 30 sec. max.
- ◆ Keep all actuators in "OFF" position during soldering and cleaning process

Order Information

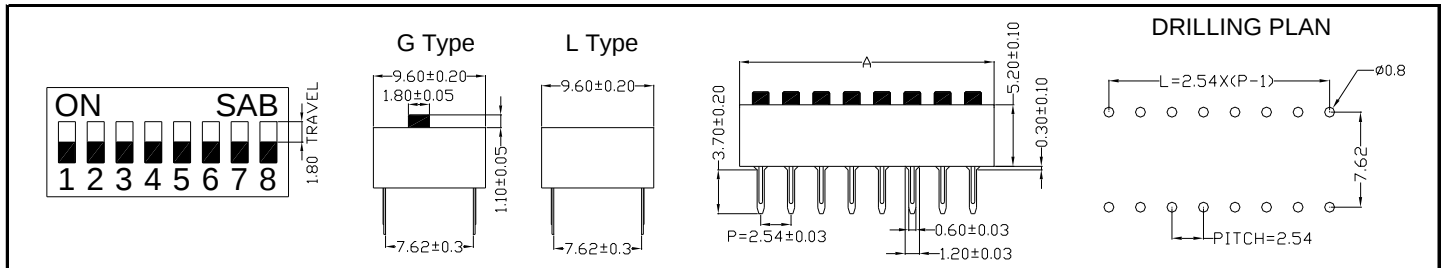
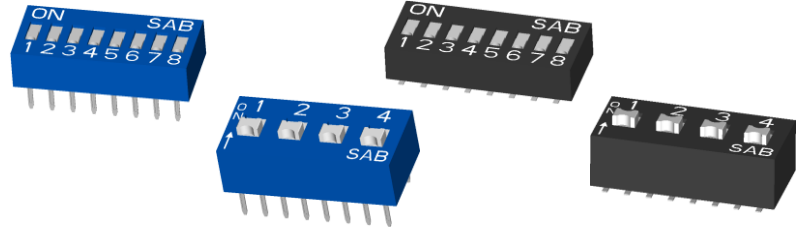




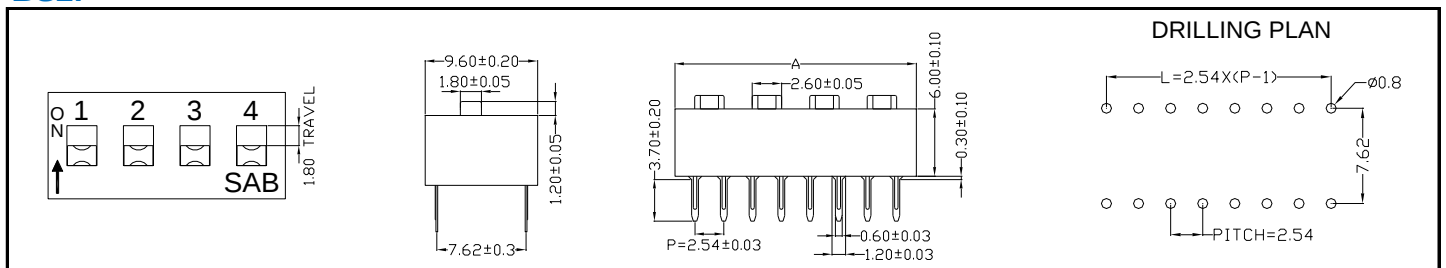
Features

- ◆ Gold-plated contact points & double movable contacts to ensure reliability and longer life expectancy
- ◆ Unique twin suspended springs offer high resistance to physical shock & vibration
- ◆ Clear ON/OFF actuation clicks
- ◆ Insert-molding technology avoids epoxy and water from intruding

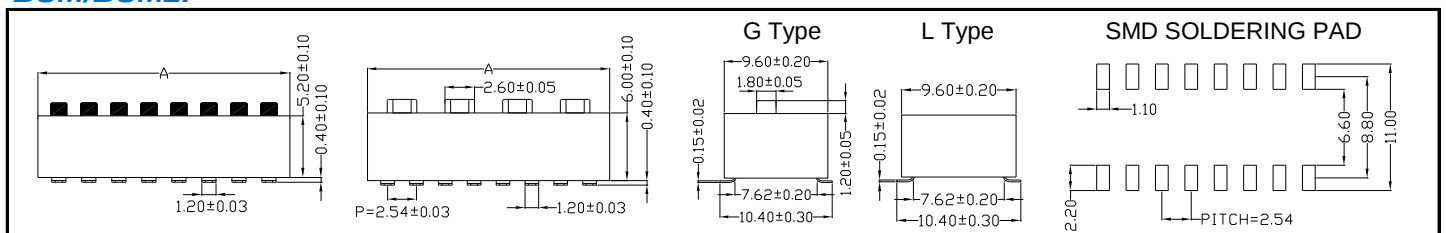
BS/BSE



BS2F



BSM/BSM2F



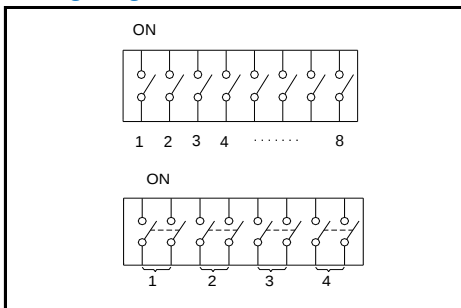
Specifications

- ◆ Contact Rating
 Switching 25mA, 24VDC
 Non-Switching 100mA, 50VDC
- ◆ Contact Resistance
 Initial 50mΩ Max
 After Life Test 100mΩ Max.
- ◆ Insulation Resistance 100MΩ min at 500VDC
- ◆ Dielectric Strength 500VAC/ 1 minute
- ◆ Operating Force..... 1,000g Max
- ◆ Mechanical Life..... 5,000 cycles
- ◆ Electrical Life..... 2,000 cycles

Soldering Information

- ◆ Hand Soldering
 Soldering Iron 30W(or under) at 350°C for 3 sec. max.
 or at 270°C for 5 sec. max.
- ◆ Wave Soldering
 BS: 260±5°C for 10 sec. max.
 BSE: 260±5°C for 5 sec. max.
- ◆ Reflow Soldering
 Peak temperature: 245°C max. The time above 240°C must be 30 sec. max.
- ◆ Keep all actuators in "OFF" position during soldering and cleaning process

Wiring Diagram



Materials

- ◆ **Cover:** Thermoplastic UL 94V-0; Blue, Red & Black
- ◆ **Base:** Thermoplastic UL 94-HB or UL 94V-0, Black
- ◆ **Actuator:** Thermoplastic UL 94-HB, White
- ◆ **Contact:** Copper Alloy, Gold-plated
- ◆ **Terminal:** Copper Alloy, Pure-Tin-plated
- ◆ **Tape Sealed:** Polyester Film

Packaging Information

- ◆ Tape & Reel: BSM
- ◆ Tube: BS/ BSE/ BS2F
- ◆ Actuators all in "OFF" position

P/N	No. Of Pole	Dim. A	Quantity per Tube
BS(E)/BSM01	1	3.54mm	148
BS(E)/BSM02	2	6.08mm	85
BS(E)/BSM03	3	8.62mm	61
BS(E)/BSM04	4	11.16mm	47
BS(E)/BSM05	5	13.70mm	38
BS(E)/BSM06	6	16.24mm	32
BS(E)/BSM07	7	18.78mm	28
BS(E)/BSM08	8	21.32mm	24
BS(E)/BSM09	9	23.86mm	22
BS(E)/BSM10	10	26.40mm	20
BS(E)/BSM12	12	31.48mm	16
BS2F01	1	6.08mm	85
BS2F02	2	11.16mm	47
BS2F03	3	16.24mm	32
BS2F04	4	21.32mm	24
BS2F05	5	26.40mm	20
BS2F06	6	31.48mm	16

Order Information

BS	M	2F	06	G	B	T	R	U
Box Slide Type BS=bottom surrounding with Epoxy sealed BSE=bottom surrounding without Epoxy sealed	Terminal: None=Standard M=SMD	Contact Forms: None=Standard 2F=2PST	Positions: 02=2 Position 06=6 Position	Actuator: G=Raise Actuator L=Flat Actuator	Color: B=Blue R=Red K=Black(BSM & THR)	None=Standard T=Tape Sealed(L) T1=Tape Sealed(G)	None=Tube R=Tape & Reel(SMD)	None=Standard U=Halogen Free



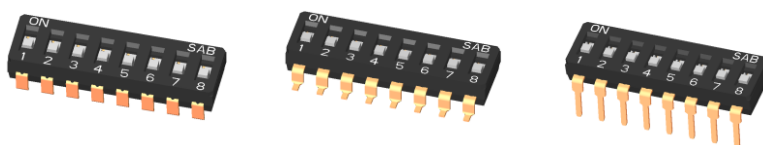
RoHS Compliant

BIWIN / Sab®

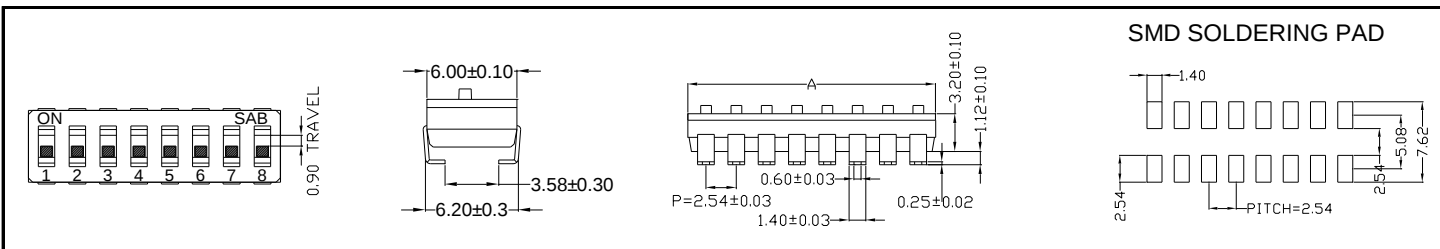
DIJ/S/A/H Series—IC Type DIP Switch

Features

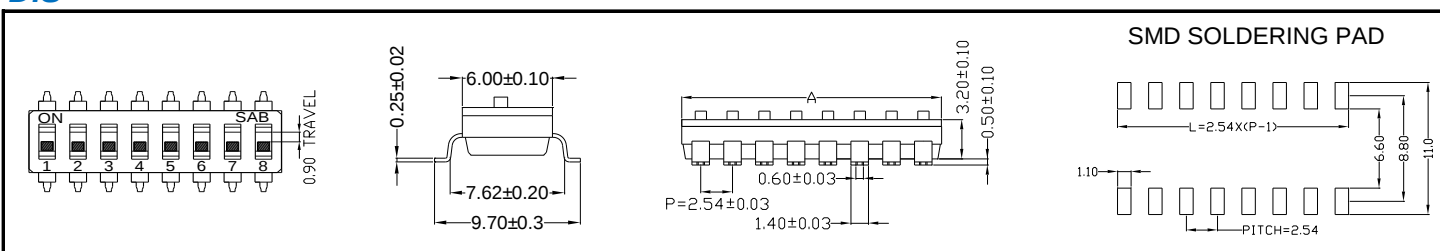
- ◆ Twin contacts designed to ensure stable contact
- ◆ Highly resistant to physical shock & vibration
- ◆ Tape sealed version available to ensure washability
- ◆ Low profile to save PCB space
- ◆ Light click feeling
- ◆ Heat resistance: 260°C for 10 sec.



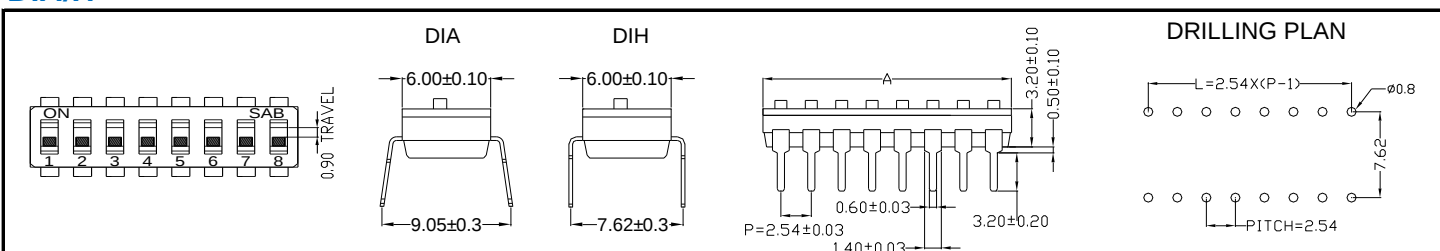
DIJ



DIS



DIA/H



Specifications

- ◆ Contact Rating
 - Switching 25mA, 24VDC
 - Non-Switching 100mA, 50VDC
- ◆ Contact Resistance
 - Initial 50mΩ Max.
 - After Life Test 100mΩ Max.
- ◆ Insulation Resistance 100MΩ min at 500VDC
- ◆ Dielectric Strength 500VAC/ 1 minute
- ◆ Operating Force..... 1,000g Max.
- ◆ Mechanical Life..... 5,000 cycles
- ◆ Electrical Life..... 2,000 cycles

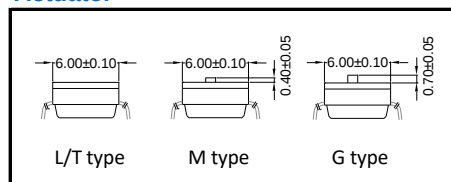
Materials

- ◆ Cover & Base: Thermoplastic UL 94V-0, Black
- ◆ Actuator: Thermoplastic UL 94-HB, White
- ◆ Movable Contact: Copper Alloy, Gold- or Pure-Tin-plated
- ◆ Terminal Contact & Terminal: Copper Alloy, Gold- or Pure-Tin-plated
- ◆ Tape Sealed: Polyimide film

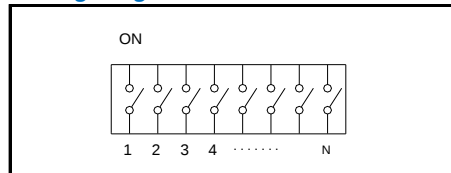
Packaging Information

- ◆ Tube: DIS/ DIA/ DIH
- ◆ Tape & Reel: DIS/ DIJ
- ◆ Actuators all in "OFF" position.

Actuator



Wiring Diagram



Soldering Information

- ◆ Hand Soldering
 - Soldering Iron of 30W or under at 350°C for 3 sec. max. or at 270°C for 5 sec. max.
- ◆ Wave Soldering
 - 260±5°C for 10 sec. max.
- ◆ Reflow Soldering
 - Peak temperature: 245 or 250°C max. The time above 240 or 245°C must be 30 sec. max.
- ◆ Keep all actuators in "OFF" position during soldering and cleaning process

Order Information

DI	S	08	G	01	R	U
IC Type	Terminal: J=J Lead S=SMD A=Auto-insert H=Straight	Positions: 06=6 Position 08=8 Position	Actuator: G=Raise Actuator M=Medium Actuator L=Flat Actuator T=Tape Sealed "G, M & L types: un-washable"	Finished: 01=1u" Gold 03=3u" Gold E=Tin Plated	Package: None=Tube R=Tape & Reel	None=Standard U=Halogen Free

Package

P/N	No. Of Pole	Dim. A	Quantity per Tube
DIS/A/H01	1	2.98mm	174
DIS/A/H02	2	5.52mm	95
DIS/A/H03	3	8.06mm	65
DIS/A/H04	4	10.60mm	48
DIS/A/H05	5	13.14mm	39
DIS/A/H06	6	15.68mm	33
DIS/A/H07	7	18.22mm	28
DIS/A/H08	8	20.76mm	25
DIS/A/H09	9	23.30mm	22
DIS/A/H10	10	25.84mm	20
DIS/A/H12	12	30.92mm	17



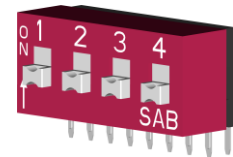
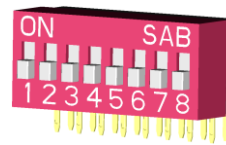
RoHS Compliant

BIWIN / Sab®

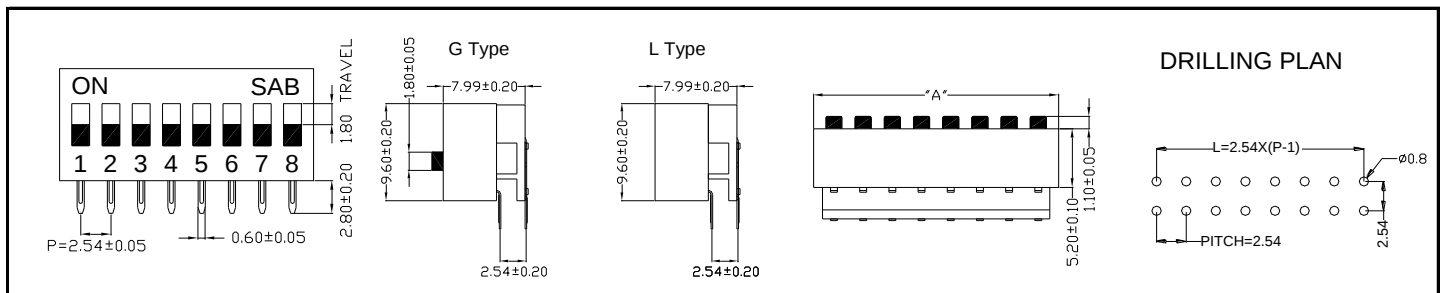
BA/BA2F Series—Right Angle DIP Switch

Features

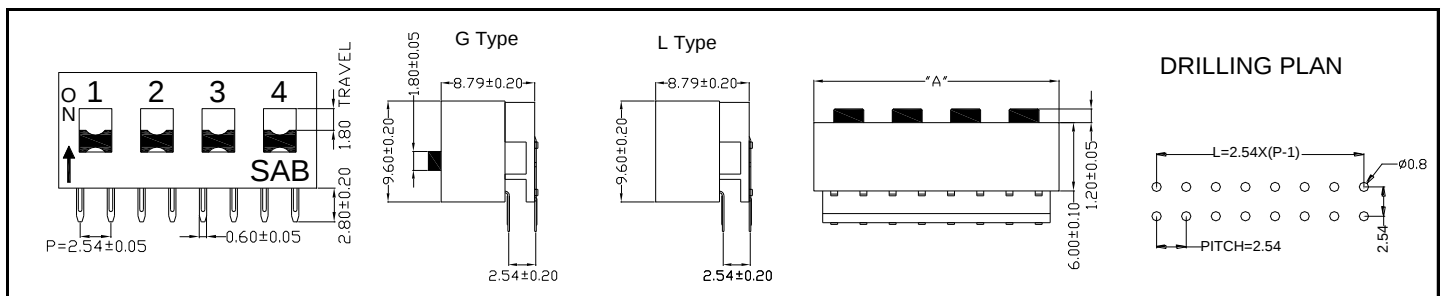
- ◆ Unique Back Support design provides easiness for PCB manual assembly and high resistance to actuation shock
- ◆ Gold-plated contact points & double movable contacts to ensure reliability and longer life expectancy
- ◆ Unique twin suspended springs offer high resistance to physical shock & vibration
- ◆ Clear ON/OFF actuation clicks
- ◆ Insert-molding technology avoids epoxy and water from intruding



BA



BA2F



Specifications

- ◆ Contact Rating
 - Switching 25mA, 24VDC
 - Non-Switching 100mA, 50VDC
- ◆ Contact Resistance
 - Initial 50mΩ Max
 - After Life Test 100mΩ Max.
- ◆ Insulation Resistance 100MΩ min at 500VDC
- ◆ Dielectric Strength 500VAC/ 1 minute
- ◆ Operating Force..... 1,000g Max
- ◆ Mechanical Life..... 5,000 cycles
- ◆ Electrical Life..... 2,000 cycles

Materials

- ◆ Cover: Thermoplastic UL 94V-0; Blue, Red or Black
- ◆ Base: Thermoplastic UL 94-HB, Black
- ◆ Support: Thermoplastic UL 94-HB, Black
- ◆ Actuator: Thermoplastic UL 94-HB, White
- ◆ Contact: Copper Alloy, Gold-plated
- ◆ Terminal: Copper Alloy, Pure-Tin-plated
- ◆ Tape Sealed: Polyester Film

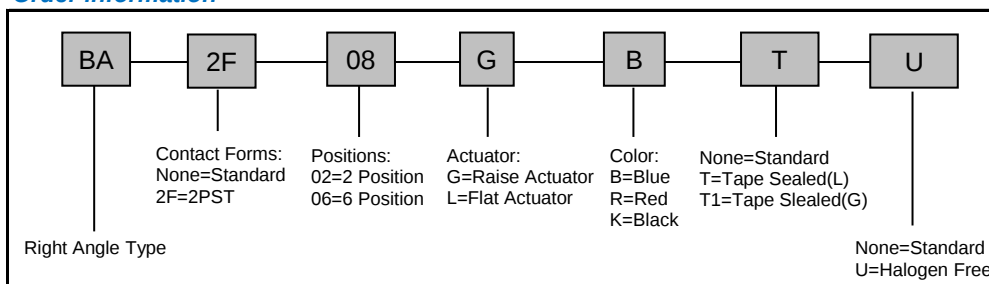
Packaging Information

- ◆ All DIP switches are shipped in Tube
- ◆ Actuators all in "OFF" position

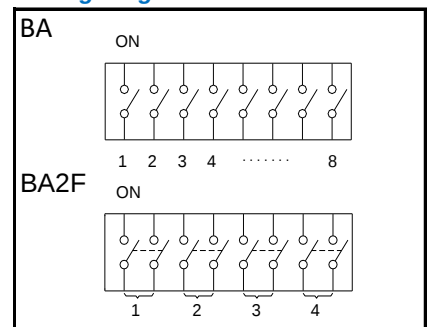
Soldering Information

- ◆ Hand Soldering
 - Soldering Iron 30W(or under) at 350°C for 3 sec. Max. or at 270°C for 5 sec. Max.
- ◆ Wave Soldering
 - 260±5°C for 10 sec. max.
- ◆ Keep all actuators in "OFF" position during soldering and cleaning process

Order Information



Wiring Diagram

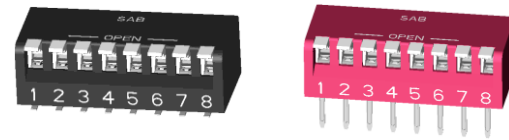


Package

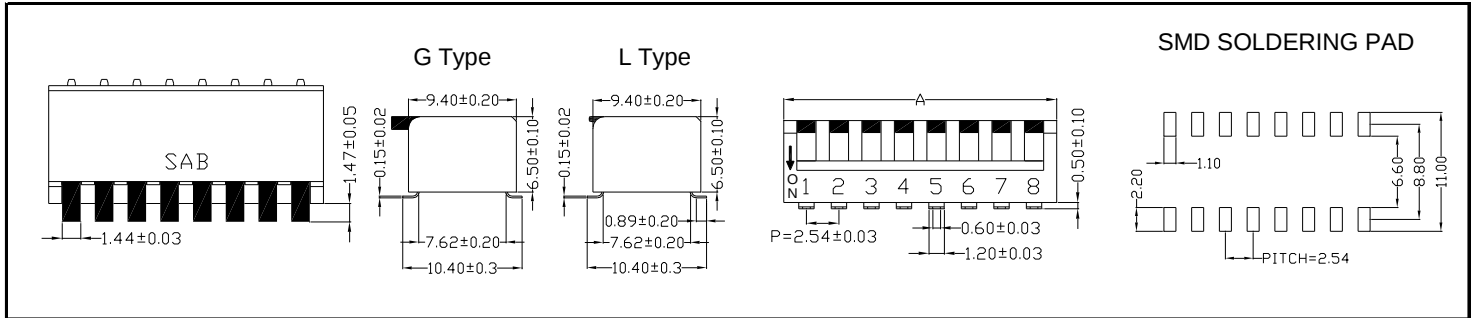
P/N	No. Of Pole	Dim. A	Quantity per Tube
BA02	2	6.08mm	85
BA03	3	8.62mm	61
BA04	4	11.16mm	47
BA05	5	13.70mm	38
BA06	6	16.24mm	32
BA07	7	18.78mm	28
BA08	8	21.32mm	24
BA09	9	23.86mm	22
BA10	10	26.40mm	20
BA12	12	31.48mm	16
BA2F01	1	6.08mm	85
BA2F02	2	11.16mm	47
BA2F03	3	16.24mm	32
BA2F04	4	21.32mm	24
BA2F05	5	26.40mm	20
BA2F06	6	31.48mm	16

Features

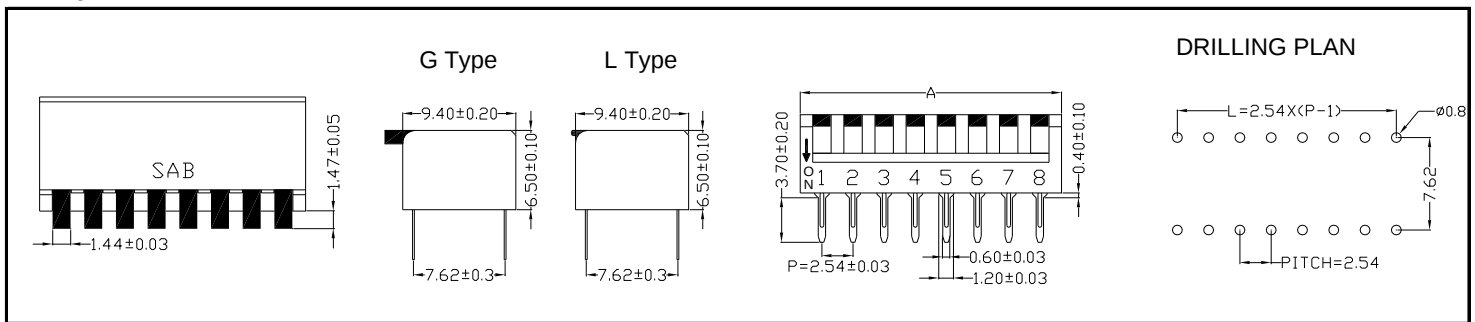
- ◆ Gold-plated contact points & double movable contacts to ensure reliability and longer life expectancy
- ◆ Unique twin suspended springs offer high resistance to physical shock & vibration
- ◆ Clear ON/OFF actuation clicks
- ◆ Insert-molding technology avoids epoxy and water from intruding
- ◆ Thru-Hole or SMD available



NPS



NPH/NPT



Specifications

- ◆ Contact Rating
 Switching 25mA, 24VDC
 Non-Switching..... 100mA, 50VDC
- ◆ Contact Resistance
 Initial 50mΩ Max.
 After Life Test 100mΩ Max.
- ◆ Insulation Resistance .. 100MΩ min at 500VDC
- ◆ Dielectric Strength 500VAC/ 1 minute
- ◆ Operating Force..... 1,000g Max.
- ◆ Mechanical Life..... 5,000 cycles
- ◆ Electrical Life 2,000 cycles

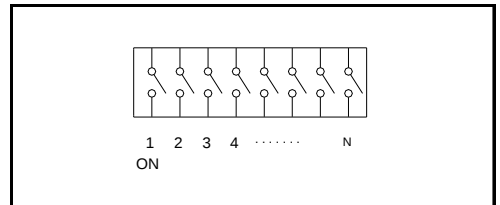
Materials

- ◆ **Cover:** Thermoplastic UL 94V-0; Black, Red & Blue
- ◆ **Actuator:** Thermoplastic UL 94-HB or UL 94V-0, White
- ◆ **Contact:** Copper Alloy, Gold-plated
- ◆ **Terminal:** Copper Alloy, Pure-Tin-plated
- ◆ **Tape Sealed:** Polyester Film

Packaging Information

- ◆ Tape & Reel: NPS
- ◆ Tube: NPS/ NPH/ NPT
- ◆ Actuators all in "OFF" position

Wiring Diagram



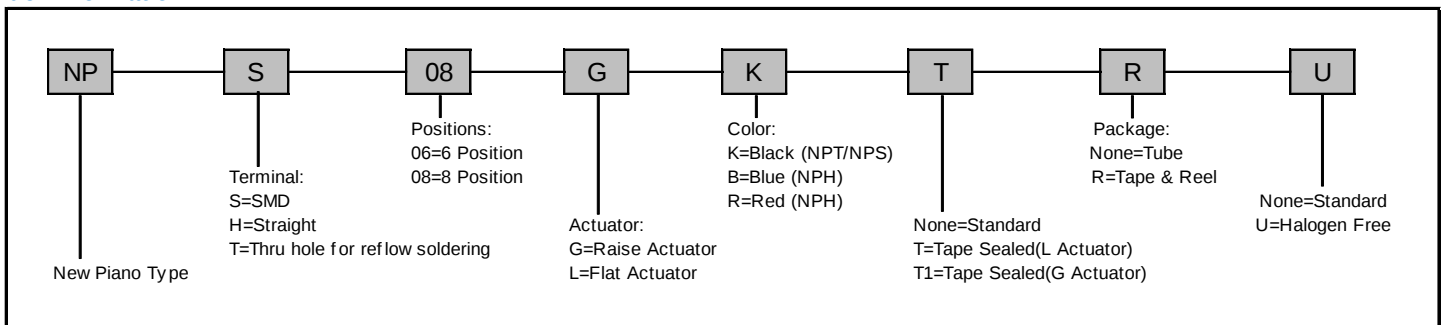
Soldering Information

- ◆ Hand Soldering
 Soldering Iron of 30W or under at 350°C for 3 sec. max. or at 270°C for 5 sec. max.
- ◆ Wave Soldering
 260±5°C for 10 sec. max.
- ◆ Reflow Soldering.
 Peak temperature: 245°C max. The time above 240°C must be 30 sec. max.
- ◆ Keep all actuators in "OFF" position during soldering and cleaning process

Package

P/N	No. Of Pole	Dim. A	Quantity per Tube
NPH/S/T02	2	6.08mm	85
NPH/S/T03	3	8.62mm	61
NPH/S/T04	4	11.16mm	47
NPH/S/T05	5	13.70mm	38
NPH/S/T06	6	16.24mm	32
NPH/S/T07	7	18.78mm	28
NPH/S/T08	8	21.32mm	24
NPH/S/T10	10	26.40mm	20
NPH/S/T12	12	31.48mm	16

Order Information





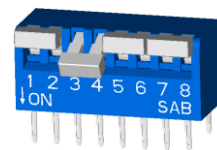
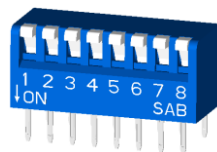
RoHS Compliant

BIWIN / Sab®

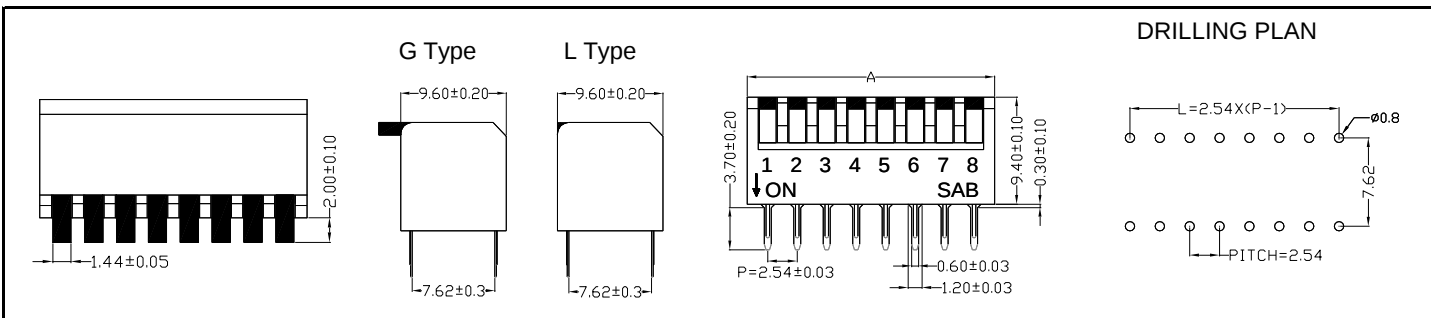
BP Series—Piano Type DIP Switch

Features

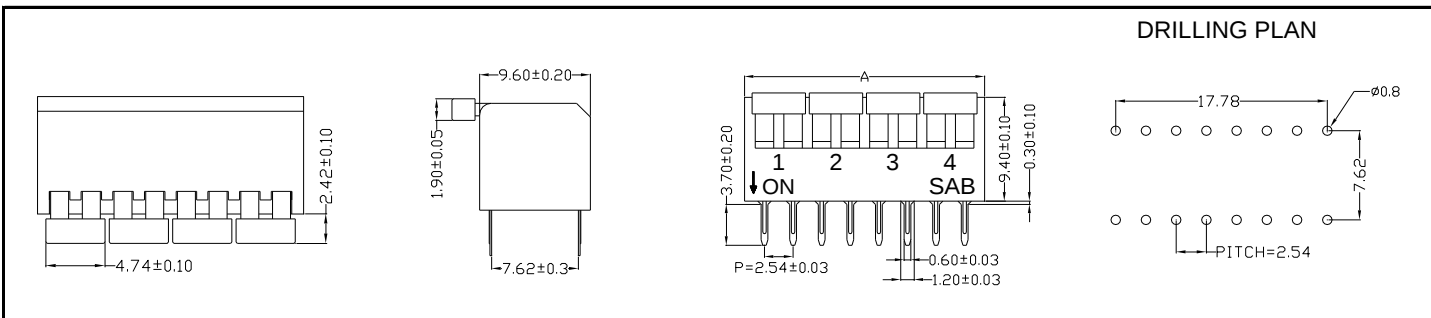
- ◆ Gold-plated contact points & double movable contacts to ensure reliability and longer life expectancy
- ◆ Unique twin suspended springs offer high resistance to physical shock & vibration
- ◆ Clear ON/OFF actuation clicks
- ◆ Insert-molding technology avoids epoxy and water from intruding



BP



BP2F



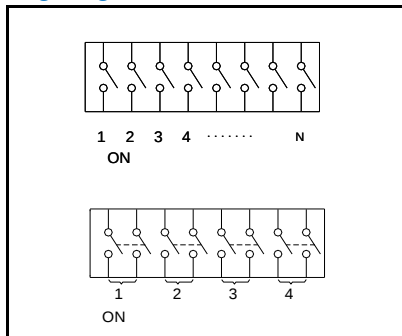
Specifications

- ◆ **Contact Rating**
 - Switching 25mA, 24VDC
 - Non-Switching 100mA, 50VDC
- ◆ **Contact Resistance**
 - Initial 50mΩ Max
 - After Life Test 100mΩ Max.
- ◆ **Insulation Resistance** 100MΩ min at 500VDC
- ◆ **Dielectric Strength** 500VAC/ 1 minute
- ◆ **Operating Force**..... 1,000g Max
- ◆ **Mechanical Life**..... 5,000 cycles
- ◆ **Electrical Life**..... 2,000 cycles

Soldering information

- ◆ **Hand Soldering**
 - Soldering Iron 30W(or under) at 350°C for 3 sec. max. or at 270°C for 5 sec. max.
- ◆ **Wave Soldering**
 - 260±5°C for 10 sec. max.
- ◆ Keep all actuators in "OFF" position during soldering and cleaning process

Wiring Diagram



Materials

- ◆ **Cover:** Thermoplastic UL 94V-0; Blue, Red & Black
- ◆ **Base:** Thermoplastic UL 94-HB, Black
- ◆ **Actuator:** Thermoplastic UL 94-HB, White
- ◆ **Contact:** Copper Alloy, Gold-plated
- ◆ **Terminal:** Copper Alloy, Pure-Tin-plated
- ◆ **Tape Sealed:** Polyester Film

Packaging Information

- ◆ All DIP switches are shipped in Tube
- ◆ Actuators all in "OFF" position

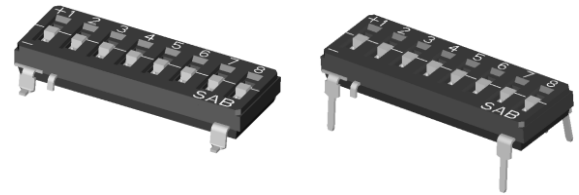
P/N	No. Of Poles	Dim. A	Quantity per Tube
BP01	1	3.54mm	148
BP02	2	6.08mm	85
BP03	3	8.62mm	61
BP04	4	11.16mm	47
BP05	5	13.70mm	38
BP06	6	16.24mm	32
BP07	7	18.78mm	28
BP08	8	21.32mm	24
BP09	9	23.86mm	22
BP10	10	26.40mm	20
BP12	12	31.48mm	16
BP2F01	1	6.08mm	85
BP2F02	2	11.16mm	47
BP2F03	3	16.24mm	32
BP2F04	4	21.32mm	24
BP2F05	5	26.40mm	20
BP2F06	6	31.48mm	16

Order Information

BP	2F	06	G	B	T	U
Piano Type BP=bottom surrounding with Epoxy sealed	Contact Forms: None=Standard 2F=2PST	Positions: 02=2 Position 06=6 Position	Actuator: G=Raise Actuator L=Flat Actuator	Color: B=Blue R=Red K=Black	None=Standard T=Tape Sealed(L) T1=Tape Sealed(G)	None=Standard U=Halogen Free

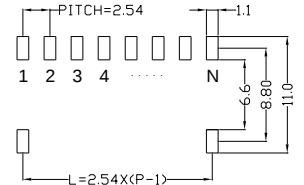
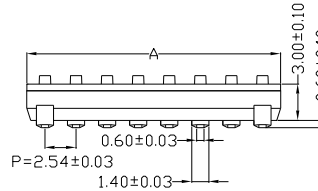
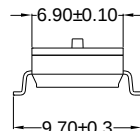
Features

- ◆ Twin contacts designed to ensure stable contact
- ◆ Highly resistant to physical shock & vibration
- ◆ Tape sealed version available to ensure washability
- ◆ Low profile to save PCB space
- ◆ Tri-State(+,0,-) setting function
- 8 poles=(3^3)=6,561 codes
- 10 poles=(3^{10})=59,049 codes
- ◆ Light click feeling
- ◆ Heat resistance: 260°C for 10 sec.



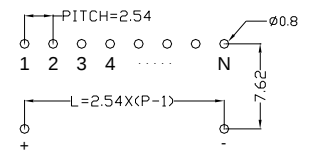
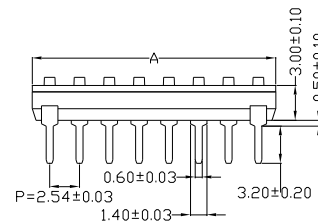
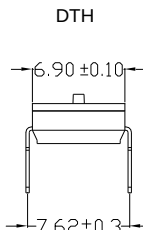
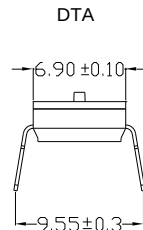
DTS

SMD SOLDERING PAD



DTA/H

DRILLING PLAN



Specifications

- ◆ Contact Rating
 - Switching 25mA, 24VDC
 - Non-Switching 100mA, 50VDC
- ◆ Contact Resistance
 - Initial 50mΩ Max.
 - After Life Test 100mΩ Max.
- ◆ Insulation Resistance 100MΩ min at 500VDC
- ◆ Dielectric Strength 500VAC/ 1 minute
- ◆ Operating Force 1,000g Max.
- ◆ Mechanical Life 3,000 cycles
- ◆ Electrical Life 2,000 cycles

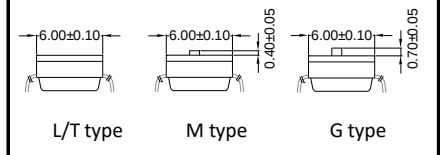
Materials

- ◆ **Cover & Base:** Thermoplastic UL 94V-0, Black
- ◆ **Actuator:** Thermoplastic UL 94-HB, White
- ◆ **Movable Contact:** Copper Alloy, Gold- or Pure-Tin-plated
- ◆ **Terminal & Terminal Contact:** Copper Alloy, Gold- or Pure-Tin-plated
- ◆ **Tape Sealed:** Polyimide film

Packaging Information

- ◆ Tube: DTS/ DTA/ DTH
- ◆ Tape & Reel: DTS
- ◆ Actuators all in "OFF" position

Actuator



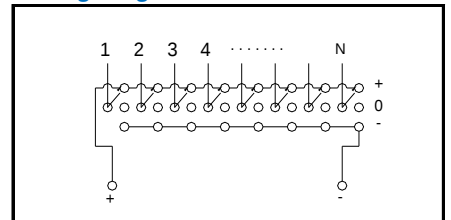
Soldering Information

- ◆ Hand Soldering
 - Soldering Iron of 30W or under at 350°C for 3 sec. max. or at 270°C for 5 sec. max.
- ◆ Wave Soldering
 - 260±5°C for 10 sec. max.
- ◆ Reflow Soldering
 - Peak temperature: 245 or 250°C max. The time above 240 or 245°C must be 30 sec. max.
- ◆ Keep all actuators in "OFF" position during soldering and cleaning process

Order Information

DT	S	08	G	01	R	U
Tri-State Type	Terminal: S=SMD A=Auto-insert H=Straight	Positions: 06=6 Position 08=8 Position	Actuator: G=Raise Actuator M=Medium Actuator L=Flat Actuator T=Tape Sealed "G, M & L types: un-washable"	Finished: 01=1u" Gold 03=3u" Gold E=Tin Plated	Package: None=Tube R=Tape & Reel	None=Standard U=Halogen Free

Wiring Diagram

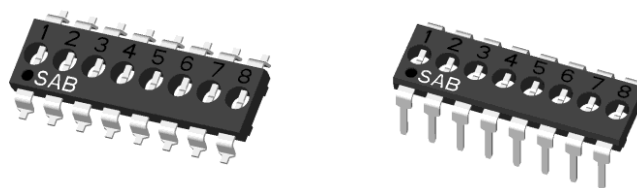


Package

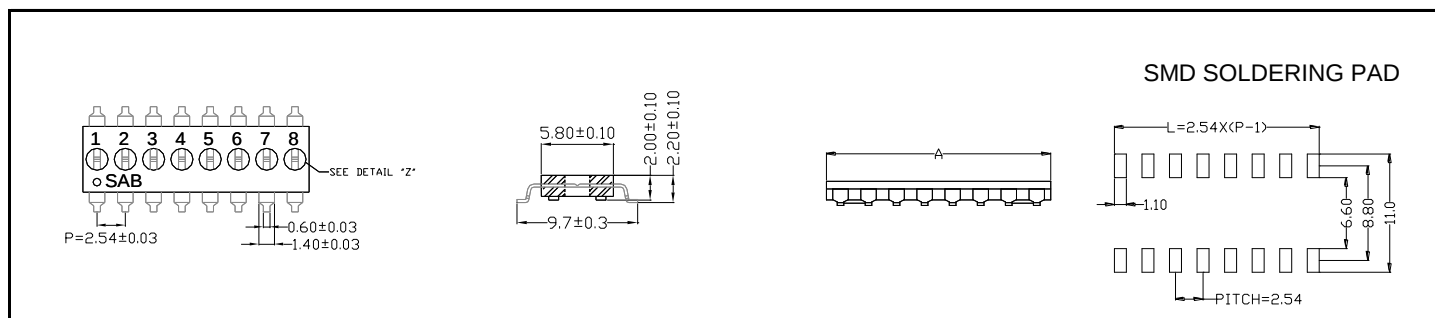
P/N	No. Of Pole	Dim. A	Quantity per Tube
DTS/A/H02	2	5.52mm	95
DTS/A/H03	3	8.06mm	65
DTS/A/H04	4	10.60mm	48
DTS/A/H06	6	15.68mm	33
DTS/A/H07	7	18.22mm	28
DTS/A/H08	8	20.76mm	25
DTS/A/H09	9	23.30mm	22
DTS/A/H10	10	25.84mm	20
DTS/A/H12	12	30.92mm	17

Features

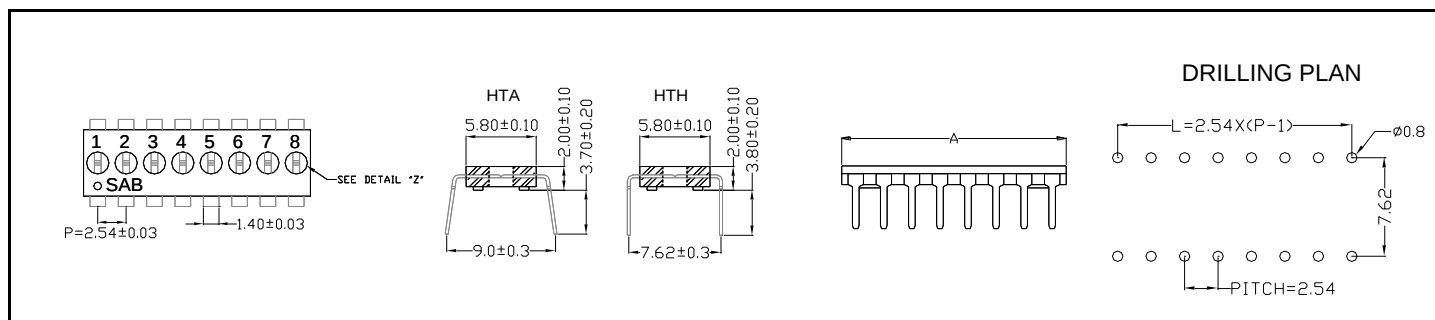
- ◆ Cost effective DIP shunt designed for switches with only one-time setup
- ◆ Connected terminal can be easily separated with a ball pen
- ◆ All shunts can be supplied either un-programmed or preprogrammed



HTS



HTA/H



Specifications

- ◆ Rating..... 1A
- ◆ Insulation Resistance 100MΩ min at 500VDC
- ◆ Dielectric Strength 500VAC/ 1 minute
- ◆ Operating Temperature..... -55°C~150°C

Materials

- ◆ **Base:** Thermoplastic UL 94V-0, Black
- ◆ **Terminal:** Copper Alloy, Pure-Tin-plated
- ◆ **Tape Sealed:** Polyimide film

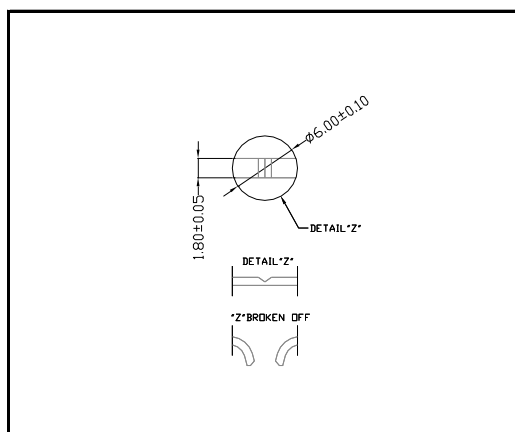
Packaging Information

- ◆ Tube: HTS/ HTA/ HTH
- ◆ Tape & Reel: HTS

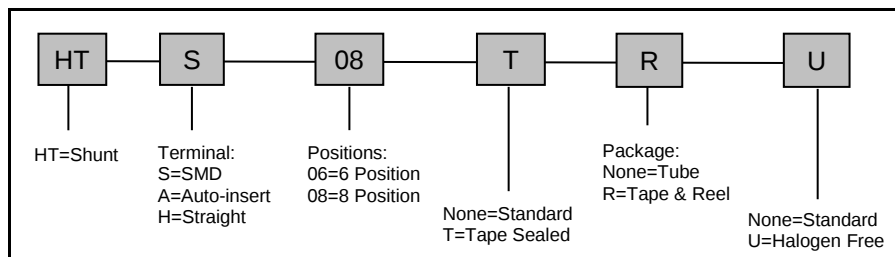
Soldering Information

- ◆ Hand Soldering
Soldering Iron of 30W or under at 350°C for 3 sec. max. or at 270°C for 5 sec. max.
- ◆ Wave Soldering
260±5°C for 10 sec. max.
- ◆ Reflow Soldering.
Peak temperature: 260°C max. The time above 255°C must be 30 sec. max.

Wiring Diagram



Order Information



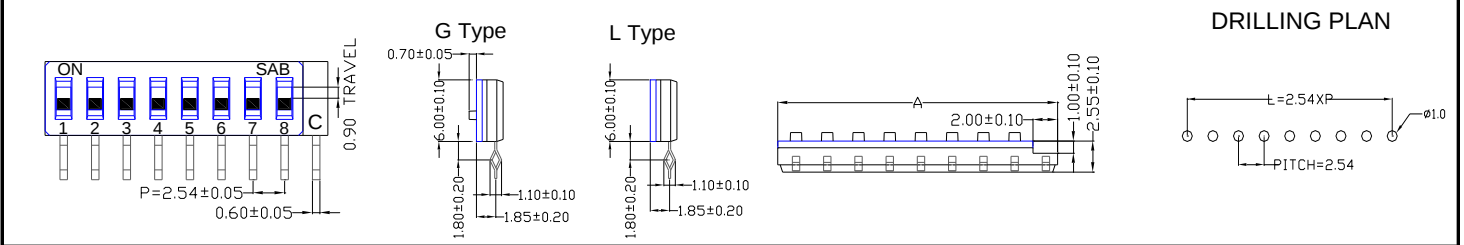
Package

P/N	No. Of Pole	Dim. A	Quantity per Tube
HTS / A / H 02	2	5.08mm	105
HTS / A / H 03	3	7.62mm	70
HTS / A / H 04	4	10.16mm	52
HTS / A / H 05	5	12.70mm	42
HTS / A / H 06	6	15.24mm	35
HTS / A / H 07	7	17.78mm	30
HTS / A / H 08	8	20.32mm	26
HTS / A / H 09	9	22.86mm	23
HTS / A / H 10	10	25.40mm	21
HTS / A / H 12	12	30.48mm	17

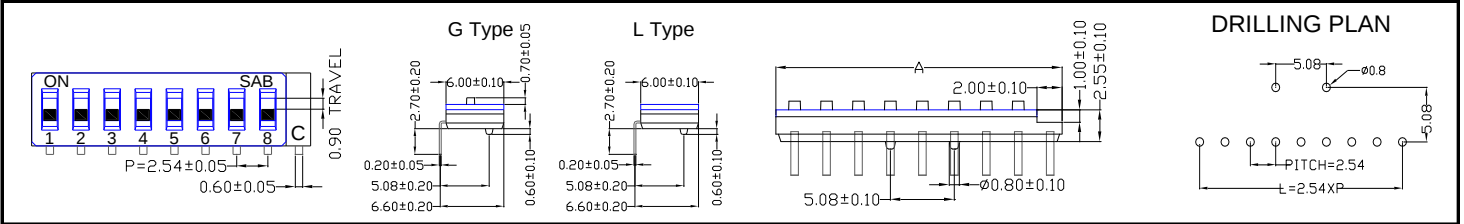
Features

- ◆ Unique SMD type provided with Gull wing and L lead terminal types
- ◆ Easy operation: Raise and Flat Actuators without special tools needed
- ◆ Long life : 3,000 cycles
- ◆ End to end stackable in 2.54 center for full versions
- ◆ Heat resistance: 260°C for 10 sec.
- ◆ Save more than 50% of the PCB space compared with the standard DIP switch

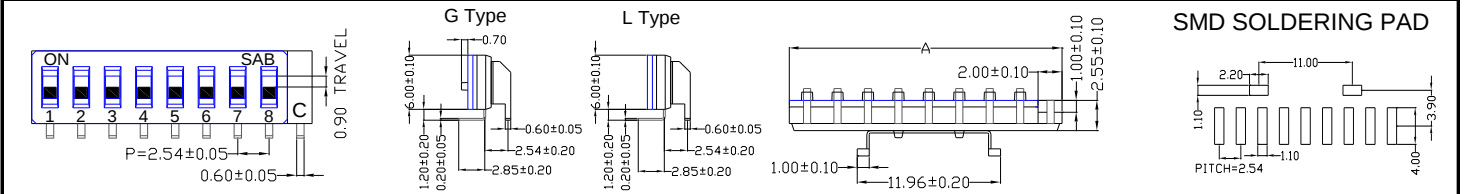
SIP



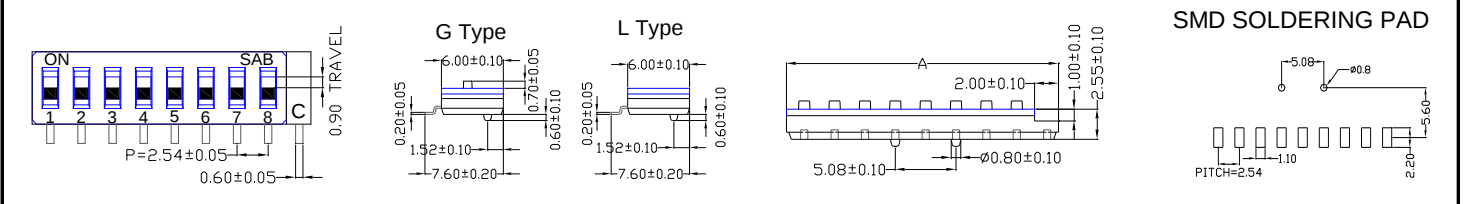
SIH



SIL



SIS



Specifications

- ◆ Contact Rating
 - Switching 25mA, 24VDC
 - Non-Switching 100mA, 50VDC
- ◆ Contact Resistance
 - Initial 50mΩ Max.
 - After Life Test 100mΩ Max.
- ◆ Insulation Resistance 100MΩ min at 500VDC
- ◆ Dielectric Strength 500VAC/ 1 minute
- ◆ Operating Force..... 1,000g Max.
- ◆ Mechanical Life..... 3,000 cycles
- ◆ Electrical Life..... 3,000 cycles

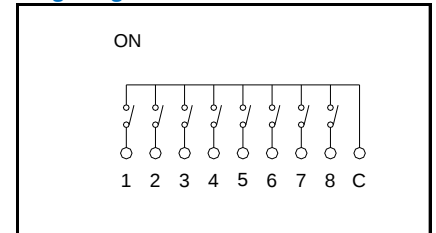
Materials

- ◆ Cover & Base: Thermoplastic UL 94V-0, Black
- ◆ Actuator: Thermoplastic UL 94-HB, White
- ◆ Movable Contact: Copper Alloy, Gold- or Pure-Tin-plated
- ◆ Terminal Contact & Terminal: Copper Alloy, Gold- or Pure-Tin-plated
- ◆ Tape Sealed: Polyimide film

Packaging Information

- ◆ Tube: SIP/ SIH/ SIS/ SIL
- ◆ Tape & Reel: SIS/ SIL
- ◆ Actuators all in "OFF" position

Wiring Diagram



Soldering Information

- ◆ Hand Soldering
 - Soldering Iron of 30W or under at 350°C for 3 sec. max. or at 270°C for 5 sec. max.
- ◆ Wave Soldering
 - 260±5°C for 10 sec. max.
- ◆ Reflow Soldering.
 - Peak temperature: 245 or 250°C max. The time above 240 or 245°C must be 30 sec. max.
- ◆ Keep all actuators in "OFF" position during soldering and cleaning process

Order Information

SIP	08	G	E	H	R	U
Single In-Line Package Switches	Positions: 04=4 Position 08=8 Position	Actuator: G=Raise Actuator L=Flat Actuator T=Tape Sealed "G, M & L types: un-washable"	Finished: E=Tin Plated 01=1u" Gold 03=3u" Gold	Holder: H=W/ Holder None=W/O Holder	Package: None=Tube R=Tape & Reel	None=Standard U=Halogen Free

Package

P/N	No. Of Pole	Dim. A	Quantity per Tube
SIP02	2	7.52mm	69
SIP04	4	12.60mm	41
SIP06	6	17.68mm	29
SIP08	8	22.76mm	23
SIP10	10	27.84mm	18
SIP12	12	32.92mm	16

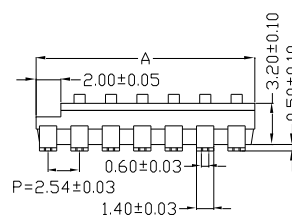
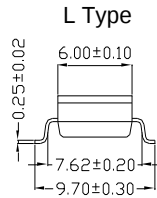
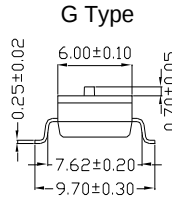
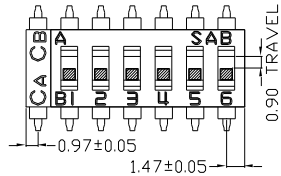


Features

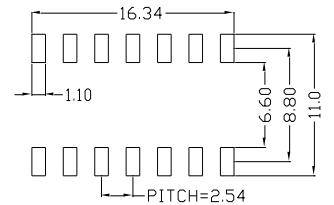
- ◆ SPDT Multipole DIP Switch
- ◆ Design Patented
- ◆ Save space for the PCB
- ◆ More Function than the SIP Switch & choice
- ◆ Change over signal circuit



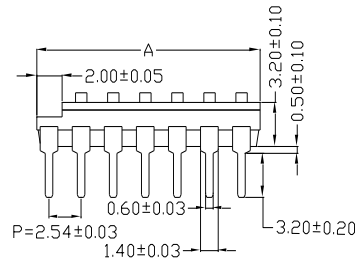
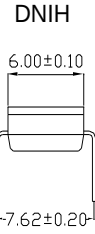
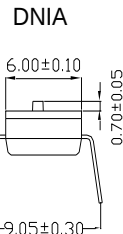
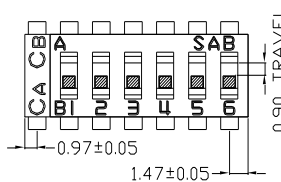
DNIS



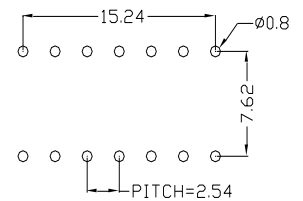
SMD SOLDERING PAD



DNIA/H



DRILLING PLAN



Specifications

- ◆ Contact Rating
 - Switching 25mA, 24VDC
 - Non-Switching.....100mA, 50VDC
- ◆ Contact Resistance
 - Initial 50mΩ Max.
 - After Life Test 100mΩ Max.
- ◆ Insulation Resistance 100MΩ min at 500VDC
- ◆ Dielectric Strength 500VAC/ 1 minute
- ◆ Operating Force.....1,000g Max.
- ◆ Mechanical Life..... 5,000 cycles
- ◆ Electrical Life.....2,000 cycles

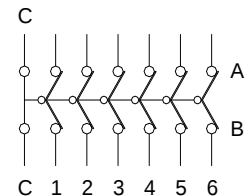
Materials

- ◆ Cover & Base: Thermoplastic UL 94V-0, Black
- ◆ Actuator: Thermoplastic UL 94-HB, White
- ◆ Movable Contact: Copper Alloy, Gold- or Pure-Tin-plated
- ◆ Terminal & Terminal Contact: Copper Alloy, Gold- or Pure-Tin-plated
- ◆ Tape Sealed: Polyimide film

Packaging Information

- ◆ Tube: DMIS/ DNIA/ DMIH
- ◆ Tape & Reel: DMIS
- ◆ Actuators all in "OFF" position

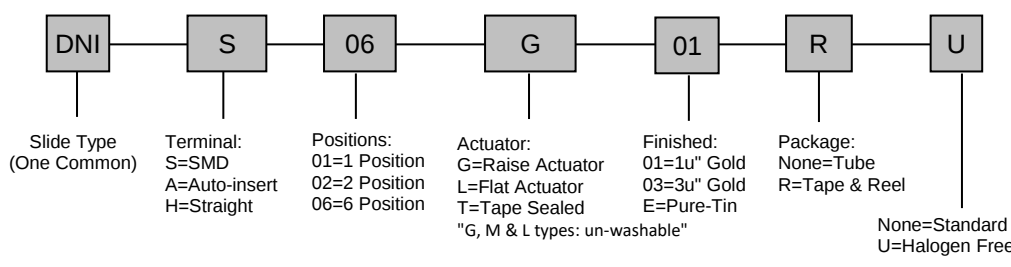
Wiring Diagram



Soldering Information

- ◆ Hand Soldering
 - Soldering Iron of 30W or under at 350°C for 3 sec. max. or at 270°C/ 5 sec. max.
- ◆ Wave Soldering
 - 260±5°C for 10 sec. max.
- ◆ Reflow Soldering.
 - Peak temperature: 245 or 250°C max. The time above 240 or 245°C must be 30 sec. max.
- ◆ Keep all actuators in "OFF" position during soldering and cleaning process

Order Information



Package

P/N	No. Of Pole	Dim. A	Quantity per Tube
DNIS/A/H01	1	4.98mm	105
DNIS/A/H02	2	7.52mm	69
DNIS/A/H06	6	17.68mm	28